



November 30, 2012

Berkner Hall

Brookhaven National Lab

9:00 – 9:20	Welcome to YRS	Doon Gibbs	Auditorium
9:25 – 9:45	Parallel Oral Sessions		A,B,C
9:45 – 10:05	Parallel Oral Sessions		A,B,C
10:05 – 10:25	Parallel Oral Sessions		A,B,C
10:30 – 11:00	A Day in the Life of a Nuclear Watchdog	Shirley Johnson	Auditorium
11:00 – 12:00	Career Panel	Carl Andre Mark Doherty Tianna Hicklin Mathew Maye Yolanda Small	Auditorium
12:00 – 2:00	Poster Session Exposition <i>Lunch (on your own)</i>		Lobby
2:00 – 2:20	Parallel Oral Sessions		A,B,C
2:20 – 2:40	Parallel Oral Sessions		A,B,C
2:40 – 3:00	Parallel Oral Sessions		A,B,C
3:00 – 3:20	Parallel Oral Sessions		A,B,C
3:30 – 4:30	Battery Science: The Keystone of the Energy Future (Making a Contribution)	Esther Takeuchi	Auditorium
4:30 – 5:00	The Role of Postdocs and Graduate Students in BNL's Mission <i>followed by</i> Awards Ceremony	Sam Aronson	Auditorium
5:00 – 6:00	Poster Session Reception		Lobby

Morning Oral Sessions

Berkner Hall, Room A

Session Chair:

9:25-9:45 AM

Mapping the phase diagram of strong interactions with a beam scan at RHIC
Vladimir Skokov

9:45-10:05 AM	Reactivity induced accidents in a light water reactor with fully ceramic micro-encapsulated fuel Nicholas R. Brown, M. Todosow
10:05-10:25 AM	Turn Humble into Noble in Hydrogen Energy: From Nanosheets to Biomass Wei-Fu Chen, K. Sasaki*

Berkner Hall, Room B

Session Chair:

9:25-9:45 AM	Microwave mobility of charge carriers on conjugated polymers Matthew J. Bird, A.R. Cook, J. R Miller
9:45-10:05 AM	Analysis of the combined Hera-Zeus data set using the dipole model Merijn H.F. van de Klundert, R. Venugopalan,* A. Rezaeian, M. Siddikov
10:05-10:25 AM	Simulation of Ptychography Experimental Design Shengyu Wang, D. Shapiro, K. Kaznatcheev

Berkner Hall, Room C

Session Chair:

9:25-9:45 AM	Programmable Self-Assembly of DNA-Nanoparticle Mesostructures Jonathan D. Halverson, A.V. Tkachenko*
9:45-10:05 AM	<i>N</i> -alkylpyrrolidine-Alane Compounds for Energy Applications Chengbao Ni, L. Yang, J.T. Muckerman, J. Graetz*
10:05-10:25 AM	Measuring Proton Beam Polarization at RHIC Dmitri Smirnov, E. Aschenauer*

Afternoon Oral Sessions

Berkner Hall, Room A

Session Chair:

2:00-2:20 PM	Physics at the future eRHIC Salvatore Fazio
2:20-2:40 PM	Can Electrophoretic Deposition be Used to Build 2D Supercrystals Alex J. Krejci, C.G.W. Thomas, J. Mandal, I. Gonzalo-Juan, W. He, R.L. Stillwell, J. Park, D. Prasai, V. Volkov, K.I. Bolotin, J.H. Dickerson*
2:40-3:00 PM	Development of an acoustic injector for high-throughput protein crystallography at the National Synchrotron Light Source II Christian G. Roessler, M. Allaire, A.M. Orville, A.S. Soares*

3:00-3:20 PM Reduction of Background in Observation of W Decay Using FVTX Tracker in PHENIX
Abraham Meles, X. Wang*

Berkner Hall, Room B

Session Chair:

- 2:00-2:20 PM Well-defined core-shell nanocatalysts for renewable energy
Yu Zhang, Y. Hsieh, V. Volkov, D. Su, R. Si, L. Wu, Y. Zhu, W. An, P. Liu, J.X. Wang,* R.R. Adzic*
- 2:20-2:40 PM Surface Chemistry over Inverse Catalysts: UHV to NAP Conditions
Ashleigh E. Baber, K. Mudiyanselage, S.D. Senanayake, A. Beatriz-Vidal, K.A. Luck, E.C.H. Sykes, P. Liu, J.A. Rodriguez, D.J. Stacchiola*
- 2:40-3:00 PM eRHIC: a new collider to explore the femto-scale structure of protons and nuclei
Benedetto Di Ruzza
- 3:00-3:20 PM Front-end ASICs for High Resolution Detectors
Alessio D'Andragora, G. De Geronimo*

Berkner Hall, Room C

Session Chair:

- 2:00-2:20 PM Plasmonic metal/inorganic/organic hybrid nanoclusters with regulated photoluminescence output
Zhongwei Liu, X. Wang, M. Cotlet*
- 2:20-2:40 PM Monte Carlo simulation techniques used in the study of different physics channels at the future eRHIC at BNL
Liang Zheng
- 2:40-3:00 PM Density Functional Kinetic Monte Carlo Modeling of Water Gas Shift Reaction on ZnO-supported Cu Nanoparticles
Liu Yang, A. Karim, J.T. Muckerman
- 3:00-3:20 PM Insulator to metal transition in WO_x induced by electrostatic charging
Xiang Leng, J. Strle, A. Bollinger, G. Dubuis, I. Bozovic*

Poster Session

1. Materials Characterization for Displacement of Heating Oil Usage in Legacy Fuel Pumps
Richard Anger, C.V. Brown, T.A. Butcher, C.S. Korach
2. Surface Chemistry over Inverse Catalysts: UHV to NAP Conditions

Ashleigh E. Baber, K. Mudiyanselage, S.D. Senanayake, A. Beatriz-Vidal, K.A. Luck, E.C.H. Sykes, P. Liu, J.A. Rodriguez, D.J. Stacchiola

3. Water Oxidation Mechanism with Ruthenium Complexes: Direct Pathway via Ru(IV) Oxo Species
Yosra M. Badiei, D.E. Polyansky, J.T. Muckerman, D.J. Szalda, R. Haberdar, R. Zong, R.P. Thummel, E. Fujita
4. Microwave absorption by mobile charges on conjugated polymers
Matthew J. Bird, A.R. Cook, J.R. Miller
5. MTERF1 induces helix unwinding and base flipping as a mechanism to form a kinetically stable final state necessary for function
James Byrnes, E. Yakubovskaya, E. Mejia, L. Norona, M. Garcia-Diaz
6. Developing a Dual Mode (PET/Fluorescence) Tag for Imaging Plant-Signaling Peptides
Patrick L. Cavins, T.E. Glass, X. Zhang, T.P. Quinn, F. Gabbai
7. Structuring a More Functional 3D DNA Lattice
Arun Richard Chandrasekaran, Y.P. Ohayon, E. Demirel, V.T. Adesoba, J.J. Birktoft, R. Sha, N.C. Seeman
8. Slow Geminate Ion Recombination in THF
Hung Cheng Chen, J.R. Miller
9. In-situ and real time X-ray synchrotron study of multiferroic BiFeO₃ thin films
Priya V. Chinta, R.L. Headrick
10. High resolution line shape measurements of overlapping spectral lines
Matthew J. Cich, S.W. Lee, S.M. Caiola, D. Forthomme, C.P. McRaven, G.E. Hall, T.J. Sears
11. Investigating the response of scintillators for the detection of laser accelerated protons
Nathan M. Cook, V. Yakimenko, O. Tresca, R. Lefferts
12. Front-end ASICs for High Resolution Detectors
Alessio D'Andragora, G. De Geronimo
13. Monolithic Active Pixel Silicon Detectors for Future Electron Ion Colliders: Status and Plans
Benedetto Di Ruzza, E. Aschenauer, B. Cole, K.T. Crowley, E. Hughes, D. Malinsky, M. Winter
14. Guided-Mode Quantum Efficiency: A Novel Optoelectronic Characterization Technique
Nanditha M. Dissanayake, A. Ashraf, Y. Pang, M.D. Eisaman
15. The Role of ECM Proteins in Mediating Osteoblast Motility and Differentiation
Kathryn Dorst, E. Farquhar, Y. Meng
16. Development of an Environmental Cell for in situ Transmission X-ray Microscopy
Christopher Eng, Y.K. Chen, Q. Yuan, J. Wang
17. Physics at the future eRHIC
Salvatore Fazio
18. FeGa₃ – a strongly correlated insulator?
Monika Gamza, A. Puri, J. Quinn, M. Aronson
19. Imaging Anti-Ferromagnetic A-type domains in strongly correlated La_{1-x}Sr_{2-2x}Mn₂O₇
Mirian García-Fernández, S.B. Wilkins, M. Lu, Q. Li, H. Zheng, J.F. Mitchell, D. Khomskii, J. Hill
20. Reactivity of carbon dioxide with main group and transition metal elements
Suzanne R. Golisz, D.C. Grills, D.E. Polyansky
21. Structure of the essential MTERF4:NSUN4 protein complex reveals how an MTERF protein collaborates to facilitate rRNA modification
Kip E. Guja, E. Yakubovskaya, E. Mejia, S. Castano, E. Hambardjieva, W.S. Choi, M. Garcia-Diaz
22. Tutorials for metabolic modeling and simulation
Jordan O. Hay, J. Schwender
23. Field Pennycress (*Thlaspi arvense*): New model plant to study oil seed development
Inga Hebbelmann, J. Shanklin, J. Schwender

24. Developing CO₂ Sequestration Options: A Study of CO₂ Insertion into Preformed CH₄ Hydrate Using X-ray Computed Microtomography (CMT)
Kristine Horvat, K. Jones, D. Mahajan
25. Combining CO₂ reduction and H₂ storage under Mild Aqueous Conditions using Proton Switchable Iridium Catalysts
Jonathan F. Hull, Y. Hameda, W.H. Wang, E. Fujita, J. Muckerman
26. Materials characterization of novel nanoscale coiled-coil protein fibers
Jasmin Hume, J. Sun, J.K. Montclare
27. Understanding the Growth Mechanics of Perpendicular Recording Media
Aaron C. Johnston-Peck, K.G. Yager, E.E. Marinero, E.A. Stach
28. Size- and Composition-Dependent Enhancement of Electrocatalytic Oxygen Reduction Performance in Ultrathin Palladium-Gold Nanowires
Christopher Koenigsman, E. Sutter, R.R. Adzic, S.S. Wong
29. Structure-based drug discovery for Botulinum neurotoxins by targeting its protease domain
Gyanendra Kumar, D. Kumaran, R. Agarwal, S.A. Ahmed, S. Swaminathan
30. Light-Driven Water Oxidation by a Molecular Ruthenium Catalyst
Anna Lewandowska-Andralojc, D.E. Polyansky, R.P. Thummel, E. Fujita
31. Single Crystal Spectroscopy Correlated with Macromolecular Crystallography at Beamline X26C for the Study of a Photoreceptor
Feifei Li, E.S. Burgie, G. Shea-McCarthy, R.D. Vierstra, A.M. Orville
32. Probing The Molecular Mechanism of Dimeric Organization of Castor Δ9-18:0 desaturase
Qin Liu, J. Shanklin
33. Cryo-Preservation of Membrane Samples for Grazing Incidence X-Ray Scattering Experiment
Yimin Mao, L. Yang
34. The Absence of Tertiary Interactions in a Self-Assembled DNA Crystal Structure
Nam Nguyen, J.J. Birktoft, R. Sha, T. Wang, J. Zheng, P.E. Constantinou, S.L. Ginell, Y. Chen, C. Mao, N.C. Seeman
35. Development of Cost-Effective and Environmentally-Benign Biogas Purification Technology Using Biochar
Saurabh Patel, D. Mahajan
36. Synthesis and Characterization of Morphologically Distinctive Yttrium Manganese Oxides at the Nanoscale
Jonathan M. Patete, A.L. Tiano, A.C. Santulli, J. Simonson, M.C. Aronson, M.G. Han, Y. Zhu, F.E. Camino, S.S. Wong
37. FlexE: a tool to evaluate protein models
Alberto Perez, J. MacCallum, Y. Zhang, I. Bahar, K.A. Dill
38. High Polarization High Current Electron Gun for eRHIC
Omer Rahman, I. Ben-Zvi, D. Gassner, A. Pikin, T. Rao, E. Riehn, B. Sheehy, J. Skaritka, E. Wang
39. Touchless sample preparation using acoustic energy for structure-based drug discovery
Christian G. Roessler, M. Allaire, B. Eaton, K. Cole, R. Stearns, S. Datwani, J. Olechno, R. Ellson, A.M. Orville, A.S. Soares
40. In situ X-ray Analysis of High QE Multi-Alkali Photocathodes
Miguel Ruiz-Osés, X. Liang, I. Ben-Zvi, K. Attenkofer, S. Schubert, T. Vecchione, H. Padmore, J. Smedley
41. Nickel(II) Macrocycles: Highly Efficient Electrocatalysts for the Selective Reduction of CO₂ to CO
Jacob Schneider, E. Fujita
42. XPS and AFM Analysis of the K₂CsSb-Photocathodes Growth
Susanne G. Schubert, M. Ruiz-Osés, X. Liang, T. Vecchione, H. Padmore, J.M. Smedley

43. Measuring Proton Beam Polarization at RHIC
Dmitri Smirnov
44. Initiators assemble 1.1 MDa loading machines at DNA origin in the beginning
Jingchuan Sun
45. Improving microalgal oil production based on quantitative analysis of metabolism
Zhijie Sun, J. Hay, C. Yan, C. Xu, J. Schwender
46. Edge Radiation for Electron Beam Emittance Measurements
Christina Swinson, M. Fedurin, V. Yakimenko
47. Manual Calibration System of the Daya Bay Reactor Neutrino Experiment
Harry W. Themann, Z. Isvan, E. Worcester
48. A General Protocol for the Synthesis of MFe₂O₄ ('M' = Mg, Fe, Co, Ni, Cu, and Zn) Nanoparticles
Amanda L. Tiano, G. Papaefthymiou, K. Guerrero, C. Zhang, Q. Li, S.S. Wong
49. Simulation of Ptychography Experimental Design
Shengyu Wang, D. Shapiro, K. Kaznatcheev
50. Cu-based Nanocatalysts for the Production of Methanol
Yixiong Yang, M.G. White, P. Liu
51. Protein-templated nanomaterials
Liming Yin, K.R. Mehta, N. Hom, K. Kirshenbaum, J.K. Montclare
52. Characterization Of Graphene-Ferroelectric Hybrid Devices
Mohammed H. Yusuf, X. Du, M. Dawber
53. Measuring Hydrogen Evolution/Oxidation on Gas Diffusion Electrodes
Yu Zhang, Y.C. Hsieh, V. Volkov, D. Su, R. Si, L. Wu, Y. Zhu, W. An, P. Liu, R.R. Adzic, J.X. Wang
54. Electrochemical and Photoelectrochemical Water Oxidation by Mononuclear Ru(II) Catalysts Functionalized onto Metal Oxide Surface
Diane K. Zhong, S. Zhao, D.E. Polyansky, J.F. Hull, E. Fujita